

- 1 1. In a microcontroller, a method of accessing a block of memory, comprising:
2 in response to an access request to the block of memory, ascertaining a
3 security rule associated with the block of memory;
4 applying the security rule according to a security algorithm to determine if
5 the access request is authorized; and
6 denying the access request in the event the access request is unauthorized.
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8 2. The method according to claim 1, wherein the access request comprises
9 one of a read request and a write request.
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11 3. The method according to claim 1, wherein the memory block comprises one
12 of a plurality of memory blocks.
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14 4. The method according to claim 3, wherein the plurality of memory blocks
15 comprise nonvolatile memory residing on the microcontroller.
16
17 5. The method according to claim 1, wherein the security rule comprises one
18 of a plurality of security levels assigned to the block of memory, the security levels
19 corresponding to ability of the processor to read or write to the block of memory.
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21 6. The method according to claim 1, wherein the security rule comprises one
22 of a plurality of security levels assigned to the block of memory, the security levels
23 defining ability of a programmer to read or write to the block of memory.
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25 7. The method according to claim 1, wherein the security rule comprises one
26 of a plurality of security levels assigned to the block of memory, the plurality of
27 security levels comprising levels which represent progressively greater security
28 against unauthorized access to the block of memory.
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1 9. In a microcontroller having an internal processor, a method of accessing
2 memory, comprising:

3 mapping a security level to each block of a plurality of memory blocks and
4 storing the mapping in a table;

5 in response to an access request to a specified block of memory,
6 determining the security level for the specified block of memory;

7 applying the a security algorithm using the security level to determine if the
8 access request is authorized by the algorithm; and

9 denying the access request in the event the access request is unauthorized.
10

11 10. The method according to claim 9, wherein the security levels comprise a
12 plurality of levels which represent progressively greater security against
13 unauthorized access to the block of memory.
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15 11. The method according to claim 9, wherein the plurality of memory blocks
16 comprise nonvolatile memory residing on the microcontroller.
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18 12. The method according to claim 9, wherein the table is stored in a supervisory
19 nonvolatile memory on the microcontroller.
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21 13. The method according to claim 9, wherein the security algorithm is stored
22 in a supervisory read only memory on the microcontroller.
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1 14. In a microcontroller, a method of controlling secure access to memory,
2 comprising:

3 in response to a request to change a security rule for a block of memory,
4 determining if the change in the security rule for the block of memory is authorized;
5 and

6 denying the request in the event the request is unauthorized.
7

8 15. The method according to claim 14, wherein the determining comprises
9 authorizing the request to change the security rule if the request comprises a
10 request to increase the security of the block of memory.
11

12 16. The method according to claim 14, wherein the security rule comprises one
13 of a plurality of security levels assigned to the block of memory.
14

15 17. A microcontroller having an electronic storage medium that stores
16 instructions which, when executed on a processor forming a part of the
17 microcontroller, carry out a process according to claim 14.
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